To: Clayton Schenck, Legislative Fiscal Analyst
Curt Nichols, Budget Analyst

From: Allan Cox

Date:October 8, 1997

Subject: Performance Based Budget Report

Attached is the Performance Based Budget (PBB) report covering the period July 1, 1995 to June 30, 1997 for the Natural Resource Information System (NRIS) at the Montana State Library. The report is cumulative for the biennium and constitutes the final report for the 1997 Biennium.

Here is an explanation of the codes used in the report:

Explanation of Codes in Report:
CODE-- a unique number for each performance measure. First digit is goal (1-3), second digit number is objective (1-8), and final two digits are performance measure number.
METH--Indicates whether people (P) or the on-line clearinghouse (O) is required for achieving the performance measure.
PRGM--Indicates which NRIS component has principle responsibility for the performance measure: ALL--all components of NRIS; GIS--Geographic Information System; NHP--Natural Heritage program; WIS--Water Information System.

If you have any questions, please give me a call at 5355.

Natural Resource Information System
Montana State Library Program 07
FY96-97 Performance Based Budget
Report Covering Period: 7/1/95 to 12/31/96
With New Additions for 1/1/97 to 6/30/97

GOAL 1: Operate Natural Resource Information Clearinghouse: The primary goal of the Natural Resource Information System (NRIS) is to operate a clearinghouse for natural resource information. NRIS does this through the acquisition, storage, and dissemination of natural resource information. The clearinghouse helps make critical information easily and readily available to all of Montana's citizens in a timely and cost-effective manner.

1. Objective: INVENTORY DATA : Through the Natural Heritage Program (NHP) the Water Information System (WIS), and the Geographic Information System (GIS) programs, inventory existing natural resource information.

Code	Performance Measure	Meth	Prgm
1101	NRIS will inventory data by identifying new data as it becomes available Initial GIS survey conducted --see summary list of data at http://nris.mt.gov/nsdi/datadir/datadir.html *: Survey of Montana GIS Users* Survey efforts are ongoing WIS staff located a precipitation model map for Montana developed by the Oregon State Climate Center under a contract with the Natural Resources Conservation Service (NRCS). The map image is available on the NRIS Water page on the Internet. WIS staff located climate summary data and graphs developed by the Climate Diagnostic Center in Bolder, CO. The data and graphs are available on the NRIS Water page on the Internet. WIS staff negotiated access to a major climate data base maintained by the Western Regional Climate Center in Reno, NV. The data base contains a nearly complete set of climate information for all of the recording stations in Montana. Data have been error checked and corrected. NHP revised plant and animal species of special lists based on new information acquired on the status of these species. WIS staff expanded the number of direct links to water information sources on the Internet. Linkage to the following data has been improved: USGS streamflow data; NRCS precipitation, snow, and streamflow forecasting; USBR agricultural soil moisture; and NCDC climate visualization information. WIS staff assisted the Montana Wetlands Council in preparations to inventory wetlands data within state, federal and private holdings. Staff identified software that will automate the inventory process and will format data according to established standards. WIS staff assisted the Montana Department of Environmental Quality (DEQ) in converting a data base of landfills into GIS format. For the first time landfill status and locations can shown on GIS generated maps. WIS staff located new sources for wind speed and daily temperature data for cities within Montana. Prior to locating these sources this information could not be provide to patrons. Created work task tracking log in MS Access to help generate reports WIS staff added new links to weather data that help users assess the potential for Spring flooding statewide. WIS staff worked with Montana Fish, Wildlife and Parks (FWP) staff to place Montana Rivers Information System (MRIS) Atlas maps on the MRIS Web page. The Atlas maps show where FWP has assessed stream resources relating to fisheries, wildlife, recreation, and natural features. High quality images of the maps can be view interactively on the MRIS Web page. WIS staff began placing new drought monitoring information on the Water Web page for the 1997 monitoring season. WIS staff placed general information on the Water Web page describing Department of Environmental Quality (DEQ) Waterbody data that will be available for use toward the end of the current fiscal year. WIS staff added several new links to general water related information sites that became available since the last report. Access to water rights data provided through the Department of Natural Resources and Conservation is now available on a limited basis. WIS staff worked with DEQ WQD personnel to access the new STOREZ data base operated by DEQ to eventually replace STORET use for data management. WIS staff completed the 1997 drought monitoring season by placing information on the Water Web page for the 1997 monitoring season. WIS staff completed the electronic version of the Montana Ground-Water Atlas which included development of ground water maps and related data. Atlas, maps, and data will be placed on the Water Information System Web-page in the Fall 1997. WIS staff completed linking of DEQ Waterbody data to EPA River Reach Hydrography. This layer will	P	ALL

	be an important data layer for identifying impaired stream reaches throughout Montana.		
1102	Verify that existing data are inventoried Initial survey completed See Measure 1101	P	ALL
1103	Contact at least 50 GIS users in Montana and document geographic data holdings Initial survey completed--see http://nris.mt.gov/nsdi/datadir/datadir.html See Measure 1101	P	GIS
1104	Revise existing geographic data inventory system to meet federal geographic metadata standards & convert existing inventory of geographic data to federal geographic metadata standards Completed--see http://nris.mt.gov/gis/datalist.html WIS: Staff drafted a proposal to the U. S. Environmental Protection Agency (EPA) to assist agencies having data on wetlands within Montana to create metadata files describing the data. This effort will generate metadata files that meet federal geographic metadata standards.	P/O	GIS
1105	Review statewide digital basemap layer needs annually General review conducted at summer and fall 1995 meetings of the Montana Interagency GIS Technical Working (TWG) WIS: received requests from watershed committees in the Upper Clark Fork Basin, Big Hole Basin, Ruby River Basin, Park County and Carbon County. The request help identify GIS layers that are needed and critical to watershed management issues. WIS: received new requests for water information in GIS format from the Upper Clark Fork Basin Steering Committee. The request help identify GIS layers that are needed and critical to watershed management issues. These requests prompted the generation of several new data layers including impaired streams due to dewatering. WIS: staff met with several groups requesting wetlands data and facilitated additional meetings and review of data and map needs. Water staff are working with these groups to facilitate the generation and conversion of data in GIS format. Groups contacting Water Information staff include the Montana Watershed Council and Wetlands Council. NHP continued collaboration with land-trust organizations in Montana, and centralized information on lands protected through conservation easements.	P	ALL
1106	Publicize results of data inventory to at least 1000 data users yearly and continually on the Internet. NRIS Internet data summary publication completed--see http://nris.mt.gov/gis/datalist.html Other results to be published in January 1996 WIS: made the publication list available to 20 walk in patrons and used it as a focal point during 10 on-line presentation and 3 oral presentations. NHP data sets on species of special concern, their status and county distribution posted on Internet. WIS: Provided six general presentations on NRIS and data available on the NRIS Internet Web Page. Results of data inventory published on-line WIS: Provided three general presentations on NRIS and data available on the NRIS Internet Web Page.	P/O	ALL
2. Objective: INFORMATION DISSEMINATION: Through the NHP, WIS, and GIS programs manage a timely, cost-effective clearinghouse and referral service to link users with the best sources of natural resource information.			
1207	NRIS will fill a minimum of 1000 basic information requests per year through the GIS, WIS, and NHP programs. Based on our request log, NRIS filled 3659 information requests during the reporting period. GIS: 1552 Heritage: 912 Water: 1195	P/O	ALL
1208	NRIS will fill approximately 500 contract supported information requests and products per year. Based on our request log, NRIS filled 1661 contract information requests for the reporting period GIS: 611 Heritage: 846 Water: 204	P/O	ALL
1209	NRIS will specify, obtain, install, and maintain a network computer server to store and provide access to natural resource information via the State Summitnet and the Internet computer networks.	O	ALL

	Server has been acquired and installed on the network. See http://nris.mt.gov/. See NRIS Fy96 & FY97 Annual Reports for numbers of remote computers logged into the clearinghouse, the number of files downloaded by remote users, and files downloaded by local users, and the number of GIS data layers donwloaded during the period. Server software was revised and updated during 2nd quarter. All NRIS data and resources were moved to the new server.		
1210	NRIS will identify and establish access to at least four new sources of data per year GIS: Gap Analysis Project: land cover GIS data, streams GIS data, & digital elevation model GIS data GIS: BLM Project: 1:100,000 scale land ownership GIS data GIS: Forest Taxation Project: Public Land Survey GIS data WIS: Access obtained to the Western Regional Climate Center data base. WIS: Access obtained to USGS Areal-time@ streamflow data. WIS: Established access to two new NOAA data bases for temperature and wind speed, and the USBR Agramet soil moisture network. GIS: Montana Hunting Districts from Fish, Wildlife, and Parks. WIS: Added links and access to water supply maps updated and maintained by the Natural Resource Conservation Service (NRCS). WIS: Added links and access to Agrimet soil moisture and climate monitoring data from the U. S. Bureau of Reclamation. WIS: Added links and access to new U. S. Weather Service data sources in Billings, Missoula, and Great Falls. NHP: added information on Wetland Indicator Values to existing plant species data base. NHP: added species records on over 400 non- vascular Montana plants (lichens and mosses) and over 600 invertebrates (primarily molluscs and insects)--species groups that are poorly-known. WIS staff established access to DEQ STOREZ data base.	P/O	ALL
1211	Produce and distribute Drought Monitoring maps for February through August each year Completed for first reporting period (July & August 1995). All of the Drought information is also included in the on-line clearinghouse--see *http://nris.mt.gov/wis/supply1.html* Completed for Feb. - June 1996. All of the Drought information is also included in the NRIS Web Page, and text has been placed on the State's Bulletin Board System (BBS). Completed for reporting period (January & August 1996). All of the Drought information is also included in the NRIS Web Page, and text has been placed on the State=s Bulletin Board System (BBS). Prepared computer programs to run the 1997 Monitoring data. Provided maps and other information to DNRC staff to update the new Lieutenant Governor who chairs the Governor's Drought Advisory Committee. Completed 1997 Drought Monitoring Season by providing and posting SWSI maps via the Internet. See http://nris.mt.gov/wis/supply1.html	P/O	WIS
1212	Provide centralized repository for data on sensitive, threatened and endangered species and biologically significant areas in the state, serving all state and federal natural resource-related agencies, the university system, and the private sector. Repository continues to be maintained, with information added, updated or deleted on an ongoing basis. Use of all system components is high. Frequently-used data sets are now posted on the Internet, which provides greater visibility and allows users to be more self-sufficient in obtaining the data they need. Photo resources are being processed to allow far greater distribution via the Internet or printed copies. Associated data base developed which tracks images, copyright and permissions data, and other associated attributes. Point Observation Database developed which provides capability to track specimens, observations, tracks, calls, etc. with GIS links. Updates made to statewide data base on bird distribution, which is the basis for the publication Montana Bird Distribution; formats developed for posting on Internet.	P/O	
1213	Promote the clearinghouse activities to at least 1000 data users yearly and continually on the Internet. Actively promoted on the Internet. New links to clearinghouse are added by remote users on a regular basis. WIS: Secured contracts for Wetlands and Watershed Data Clearinghouse activities.	P/O	ALL
3. Objective: IDENTIFY DATA GAPS: Through the NHP, WIS, and GIS programs identify gaps in natural resource information.			
1314	Review data availability for every information request and record any data gaps.	P/O	ALL

	data gaps are regularly recorded in the NRIS request log.		
1315	Add 400 new species occurrence records 526 records added to-date (ca. 1500 updated; 200 deleted).	P/O	NHP
1316	Add 800 abstracted bibliographies 1726 Bibliographies added to-date	P/O	NHP
1317	Add 1,000 species taxonomic records Approximately 1,000 species records added and updated, primarily non-vascular plants and invertebrates.	P/O	NHP
1318	Add 350 plant characterization abstracts to the databases 159 Abstracts added to-date approximately 300 abstracts updated with additional information.	P/O	NHP
1319	Conduct 25 comprehensive Heritage field surveys & publish results. To date: 9 community ecology reports published based on survey results (3 new) 18 botanical reports published based on survey results (4 new) 26 zoology reports published based on survey results (5 new)	P	NHP
1320	Work with state & federal natural resource agencies to determine 15 biological data priorities which could be developed/managed. NHP has been designated to be repository of statewide interagency data on black-tailed prairie dogs, a priority species NHP has initiated a statewide guidebook on species of special concern using the Internet as a foundation: this has long been a federal and state need but cost prohibitive until now NHP has agreed to standardize and maintain a comprehensive flora and fauna databases which will replace independent databases maintained by the US Forest Service, Intermountain Research Station and various state museums. NHP entered into an agreement with the National Biological Service to serve as a pilot program for greater access, via the Internet, to Heritage Program data. This will increase access to information by all agencies that have Internet capabilities. Compiled a preliminary list of moss species of special concern, and obtained data on these species from academic and agency herbaria. Compiled preliminary distribution and biological data on mollusc and gastropod species of special concern in Montana. Developing a system for providing high-quality color images of species and habitats of special concern to requestors via a digital library of slides and photographs. Collaborating with BLM to provide electronic data subsets for inclusion in the BLM=s species databases. In the process of obtaining statewide information on caves, which often harbor significant populations of bats and other species. Developing multiple GIS coverages for shortgrass/shrubland communities and other vegetative types for eastern MT and adjacent states/provinces. Working with FWP and FWS to develop means and standards to identify and map occurrences of wide-ranging vertebrates. Working with FWP, BLM, USFWS and USFS to centralize information on reptile and amphibian species; efforts have resulted in publication in *Montana Outdoors*. Through the Wetlands Council, NHP has identified a need to develop a computerized format for wetlands evaluation forms, and for consolidating information in a single repository. Plans are underway for developing the appropriate database. Landscapes and species in eastern Montana continue to be poorly-known. NHP has conducted a county-level inventory in one county, has proposed similar inventories in two additional counties, and is currently synthesizing information on herpetile and grassland bird species in the Great Plains portion of the state. The need exists for a comprehensive statewide community classification that can be crosswalked to, and used by, all land management agencies in the State. NHP is beginning this process on an ecoregion-basis, starting with information compiled in southwestern Montana.	P	NHP
1321	Assess GIS data coverages to identify gaps & progress made filling gaps. WIS: Drought Monitoring related - Negotiated access to lightening strike data and vegetation greenness index data from the USFS Fire Lab in Missoula. WIS: Drought Monitoring related - Negotiated access to Standardize Precipitation Index data from the	P	GIS

	Western Regional Climate Center in Reno, NV. GIS identified 48 data gaps +7 WIS: Drought Monitoring related - Began placing USFS Greenness maps on the NRIS Web Page. WIS: Created a GIS layer of DEQ regulated landfills. Metadata and the layer are available on the NRIS Web Page. WIS: Worked with the Upper Clark Fork Steering Committee staff to identify data layers that are needed to support Committee oversight in the Basin. GIS: 84 data gaps identified WIS: Worked with DEQ staff to initiate a project to integrate Waterbody data into a GIS and facilitate public access to the information. WIS: Worked with the Montana Volunteer Water Monitoring Advisory Committee to identify tools and data sources that would assist citizens in monitoring efforts. Water staff are now working to create tools and facilitate access to data sources. WIS: Created GIS coverage for DEQ Waterbody (Impaired streams) data base.		
D. Objective: FILL DATA GAPS: Through the NHP, WIS, and GIS programs, and cooperation with other entities, assist in filling natural resource information gaps.			
1423	Enter into at least four projects (contracts) to help fill data gaps. Entered into contracts with: U.S. Forest Service to develop land characterization data State Historic Preservation Office to develop archeological databases on Flying D Ranch Department of Environmental Quality to develop numerous databases related to remediation of Clark Fork Superfund sites Department of Environmental Quality to develop various databases related to air quality monitoring USFS to describe and characterize USFS sensitive plant species. Bureau of Land Management to develop technical illustrations and photographs of special status species. Department of Environmental Quality to link the water bodies data base with EPA River Reach Numbers. When completed this will allow linking water body data to several important water data basis including the FWP Rivers Information System, EPA Storet, and others. Department of Environmental Quality Volunteer Monitoring contract was signed and work initiated. This project will provide volunteer groups access to data, services, and technical support. Department of Environmental Quality to develop numerous databases for Belt area acid mine drainage remediation Bureau of Land Management to secure and automate data on files in District and Resource Area offices in Montana. University of Montana and USFWS to develop species distribution and habitat data for vertebrates, contributing to the statewide GAP analysis project. Department of Environmental Quality to link the water bodies data base with EPA River Reach Numbers. Contract was signed and work was initiated during the reporting period. Department of Environmental Quality Wetlands Metadata Project. Planning is in advanced stages to finalize the project and develop a contract. Water staff would provide training and some technical support to organizations and agencies to document and describe wetlands data sets. Department of Environmental Quality Wetlands data clearinghouse. The Water Information System was requested by the DEQ to draft a proposal to provide statewide clearinghouse services for wetlands data. A proposal was submitted to the DEQ and forwarded to the EPA. DEQ Wetland Inventory and Assessment project: NHP will conduct and inventory of a priority basin in Montana and report on results. NHP entered into an agreement with the Montana Gap Analysis Lab to compile and provide information on reptile, amphibian and mammal distribution in the state. NHP conducted surveys in eastern Montana on grassland birds, colonial nesting waterbirds, herpetiles, and rare plants, in cooperation with the US Fish and Wildlife Service, the BLM and US Forest Service. NHP entered into an agreement with the BLM to compile species and habitat photos of priority species.	P	ALL
1424	Actively seek and locate new sources of information to help fill data gaps GIS filled 48 data gaps. (Not a direct correlation with 1421)+4 NHP filled many site-specific data gaps through surveys and securing existing data. Significant data gaps on poorly-known species, noxious weeds, and facilitating access to other data for Montana. NHP Compiled data from museums, microfiche, literature and notes (over 25 sources) for Point Observation Database development . WIS staff located at least three new data sources during the reporting period and continue to monitor the Internet for water related data sources. GIS filled 96 data gaps. (Not a direct correlation with 1421) NHP solicited photographs on sensitive species from professionals nation-wide; requested and received permission from University of Washington Press and New York Botanical Garden to duplicate 300+ species illustrations.	P/O	ALL
1425	Develop, manage, and make available 10 data sets based on identified priorities above.	P/O	ALL

	See Objectives 1-3 WIS: Worked with Fish, Wildlife and Parks and DEQ staff to initiate impaired stream data to support the Upper Clark Fork Steering Committee.		
1426	Develop a plan for completing two statewide basemap layers NHP: Develop distribution maps and habitat models for herpetiles and mammals in conjunction with Gap project began incorporating weed data and general information from Dept. Agriculture; continued development and maintenance of state-wide protected areas coverage and Point Observation Database for wildlife species. WIS: Negotiated contract to link the DEQ Water bodies data base with EPA River Reach Codes. Project work with begin pending final approval on the contract from the DEQ. WIS: Negotiated contract to link the DEQ Water bodies data base with EPA River Reach Codes. The contract from the DEQ has been signed and work has commenced. WIS: Staff completed the landfill layer in cooperation with the DEQ. GIS: Developing plan to complete Digital Elevation Model Database for the entire state. NHP developed data base for managing digital photographs and illustrations, archived images on CD-ROM,	P	ALL
1427	Facilitate two statewide cooperative database development projects Currently facilitating development of statewide Public Land Survey GIS data layer Currently facilitating statewide GIS ownership layer at 1:100,000 Finished work on developing a statewide Montana Rivers Information System GIS database Entered into cooperative agreements with BLM and USFS for development of species characterization abstracts. WIS: Staff completed the landfill layer in cooperation with the DEQ. GIS: Developing plan to complete Digital Elevation Model Database for the entire state. Developing and disseminating information on Point Observation Data and Noxious Weed information. NHP initiated development of a statewide flora, standardized among agencies, and drawing information from agencies such FWS, USFS, NRCS and BLM	P	ALL
1428	Update four statewide water information GIS coverages annually See 1427 and 1426 above	P	WIS
1429	Coordinate at least two meetings annually with major information sources to help focus resources toward filling known gaps. Facilitated three Montana GIS Technical Working Group meetings. Helped organize and provide support to the Information Technology Advisory Council's (ITAC) 6 month GIS Task Force effort WIS: Held two Ground Water Assessment Act meetings to coordinate collection of ground-water resources. WIS: Coordinated 4 meetings with a sub-committee of the Watershed Advisory Committee to develop watershed management maps for the State. WIS: Held one Ground Water Assessment Act meetings to coordinate collection of ground-water resources. WIS: Coordinated 3 meetings with groups interested in re-starting the Montana Climate Center. WIS: Coordinated a meeting of agencies involved with surface water reservoir operations to plan and design an Internet Web Page to help facilitate information dissemination with the public and other interested groups. NHP: conducted and coordinated annual meetings with the Bureau of Land Management for identifying research needs. NHP: organized and conducted annual Rare Plant Conference, bringing together botanists from neighboring states to assess data needs and new information.	P	ALL

GOAL 2: Support Interagency Data Coordination: In order to effectively operate the clearinghouse and provide accurate data, NRIS coordinates and promotes the program among all public agencies. Interagency coordination and the development of data standards help insure the accuracy and quality of the data; helps avoid the duplication of data creation and distribution; helps insure that critical data sets are created; and promotes the sharing of resources and information.

5. Objective: INTERAGENCY COORDINATION: Serve as liaison and coordinate among agencies that collect, manage or use the same types of natural resource information to prevent duplication of effort and promote information sharing.			
Code	**Performance Measure**	**Meth**	**Prgm**
2530	Provide support to natural resource coordinating bodies such as the Interagency GIS Technical Working	P	ALL

	group, the Interagency Natural Areas Working Group, the Interagency Water Coordinating Group, the Interagency Ecosystem Management Working Group, etc. Facilitated 8 meetings of the GIS TWG WIS: Coordinated two meetings of the Ground Water Assessment Steering Committee. WIS: Coordinated 4 meetings with a sub-committee of the Watershed Advisory Committee. WIS: Held one Ground Water Assessment Act meetings to coordinate collection of ground-water resources. WIS: Coordinated 3 meetings with groups interested in re-starting the Montana Climate Center. WIS: Coordinated a meeting of agencies involved with surface water reservoir operations to plan and design an Internet Web Page to help facilitate information dissemination with the public and other interested groups. WIS: Coordinated a meeting of the Wetlands Council data management group. WIS: Met with DEQ staff to develop a project proposal for creating a GIS tool to map active water-related projects by watershed. This would greatly assist agencies in coordinating with each other and evaluating progress on water issues. WIS: Held 6 Ground Water Assessment Act meetings to coordinate collection of ground-water resources, and to work through budget problems affecting the program operation. WIS: Coordinated two meeting of the Wetlands Council data management group. GIS: Facilitated many components of the 1996 Montana GIS Conference NHP: Provide support for the 1997 Montana Natural Areas Working Group meeting. GIS: Providing support for the 1997 Montana GIS Conference		
2531	Whenever feasible, will help coordinate projects to create or improve information GIS: Facilitated Natural Resource Conservation Service (NRCS) / Butte Silver Bow soils database creation project. Helped with State/USGS Digital Elevation Model data Development efforts WIS: Organized two meetings and participated in 4 others to help revitalize the Montana Climate Center and establish a climate information center for Montana. WIS: Provided input and briefings to the Watershed Coordinating Committee primarily regarding coordination of water management efforts around the State. Also, to help assess the feasibility of mapping water projects. NHP agreed to maintain standardized statewide flora and fauna databases, eliminating duplicate databases maintained by the US Forest Service, Intermountain Research Station and state museums. Began work with the University of Montana to develop a Natural Resource Public Access Center for NASA remotely sensed data. Provided technical assistance to MT Departments of Fish, Wildlife, and Parks and Environmental Quality, and the State Historic Preservation Office to develop Internet access to their information Provided assistance, support, data and information to the UM Information Technology Resource Center to create natural resource data sets and software to be used in K-12 classrooms (in progress). Developed and taught one-day GIS ArcView training to teachers and RC&D employees in Lewistown WIS: Coordinated a meeting of agencies involved with surface water reservoir operations. WIS: Met 3 times with staff of the EQC to help evaluate the applicability of data bases to the EQC's environmental indicators study, and to facilitate access. Worked with Department of Agriculture to post noxious weed information on-line. Incorporating species photos, habitat and distribution maps to general information of VCAs.	P/O	ALL
2532	Continue to populate the Natural Areas data base NHP trained USFS employee on data entry and standards for off-site data entry of USFS natural areas records Natural areas records updated as new information is received Agreement currently being negotiated to post all natural areas information on NHP web site, including maps and photos.	P/O	NHP
2533	Coordinate information from all signatories to the Natural Areas MOU Worked with USFS contractor to enter Research Natural Area data Digital boundary information updated as provided by managing agencies. Conducted baseline surveys for FWS natural areas in eastern Montana, incorporating information into data bases.	P/O	NHP
2534	Coordinate projects to create or improve information See other coordination efforts in this section (see sect 2531)	P	ALL
2535	Facilitate at least six meetings on data coordination and sharing Facilitated 8 meetings of the Interagency GIS Technical Working Group (TWG) Coordinated a meeting with the National Weather Service to facilitate improved access to precipitation data for Drought Monitoring.	P	ALL

	Met with the FWS Wildlife, the USFS Region 1 Office, UM Information Technology Resource Center, the UM School of Forestry, the MSU Water Course Office, and the MSU Water Resources Center to identify cooperative opportunities Organized meeting with other heritage programs on standardizing GIS applications of heritage data. Worked with other western states on a standardized community classification. Organized and held GIS coordination meeting with other NHPs in western US and Canada. Initiated multi-state project on data coordination and assessment in northern Great Plains. NHP initiated and coordinated annual Rare Plant Conference. NHP conducted workshops on herpetile, bat and small mammal survey and inventory techniques.		
2536	Promote data efforts by: assisting in the publication of four GIS newsletters Published six GIS newsletters.	P/O	GIS
2537	Make at least 12 public presentations on natural resource information topics Provided Internet briefing and training to DEQ (2 Sessions), Governor, and Historical Society (SHPO) Provide one-day workshop to K-12 teachers on GIS and the Internet Presentation to Bitterroot Water Forum WIS: Assisted FWP in initiating use of new data base software. Presentation to URISA July 19th on GIS Metadata project (2) Presentation to NW Arc/Info Oct 24 WIS: provided 5 general presentation on the Water Information System and access to water data. NHP: Presentation to Federal Highway Administration (MT, Washington and Reg 8) and MT Department of Transportation. Presentation to TNC Board, Billings civic leaders, legislators, and business owners in Billings. Public presentations: - MT Association of Counties (MACO) Annual Meeting: NRIS Services--Great Falls - MT Library Association (MLA): GIS Workshop & NRIS Services--Helena - GIS Workshop at MT GIS Conference--Missoula - MT Information Technology Advisory Council (ITAC)--GIS Presentation--Helena - MT DNRC: Internet Basics (2 times), & GIS Basics--Helena - Environmental Quality Council (EQC): NRIS Services & Internet Services--Helena - Clancy Elementary School: GIS Basics & NRIS Services: Clancy - Roundup Resource Conservation District & Lewistown Area Schools: GIS Basics & NRIS Services GIS: Presentation on GIS clearinghouse at ESRI national conference GIS: Presentation to FWP on using the Internet to access GIS Data GIS: Three presentations to K-12 teachers on use of ArcView GIS software GIS: Presentation on GIS and NRIS to Montana Conservation Districts	P	ALL
2538	Attend, monitor, and brief natural resource coordinating bodies WIS: Attended and provided presentations at two Watershed Coordination Council meetings. WIS: Chaired two Ground Water Assessment Steering Committee meetings. WIS: Attended in an Environmental Quality Council meeting and participated in a panel discussion on environmental indicators. WIS: Chaired a Ground Water Assessment Steering Committee meeting. WIS: Attended in Environmental Quality Council meetings. NHP: participated in Montana Wetlands Council meetings and subcommittees NHP: participated in and made presentations to Montana Rare Plant Conference	P	ALL
2539	Perform an inventory of active information creation projects in Montana See above reports on inventory efforts	P/O	ALL
2540	Publicize the results of the project inventory See above reports on inventory efforts	P/O	ALL
2541	Facilitate the use of Internet and the State communication network for coordinating information activities. Obtained and implemented Federal geographic Data Committee grant to install GIS list server, WAIS Server, Data Inventory, etc. Provided 10 Internet specific presentations to schools and other state agencies. NHP received grant from Department of Agriculture to disseminate sensitive species data via the Internet.	O	ALL
6. Performance Measure/Target: STANDARDS: Through the NHP, WIS, and the GIS programs, assist in the development of standards for the collection of natural resource information.			
2642	Assist the development of data collection and documentation standards for State, federal, and local government agencies	P	ALL

	The Interagency GIS TWG (20 State & Federal agencies) revised and adopted FGDC Metadata Standards; Spatial Data Transfer standards Have actively promoted FGDC Metadata Standards--ITAC will likely adopt as official State standard this Spring Facilitated FGDC on-site workshop and briefing on standards On-going: participated in the ITAC GIS Task Force that is addressing GIS standards and policies Initiated the use of Kartesz as floristic taxonomic standard Produced Fifth Edition of Montana Bird Distribution, which required and includes thousands of records submitted in a standardized format Consulted with Fish, Wildlife and Parks contractors collecting data on prairie dogs, providing guidance on minimum data standards and fields. WIS: Provided support the Montana Wetlands Council in preparing an inventory of wetlands data. Facilitated FGDC panel discussion at Montana GIS Users Conference Participate on the Montana Cadastral Mapping Project Technical Advisory Committee. Support development of National Spatial Data Infrastructure nodes at 4 locations in Montana. NHP conducted workshops on accurate collection and reporting of field data on reptiles, amphibians, small mammals, and bats. NHP assisted USFS and FWS in determining species= status, with all agencies using and relying on the NHP system of evaluating species abundance or rarity.		
2643	Review the Montana State GIS standards and revise it to adhere to federal standards Completed in FY96 (see 2642)	P	GIS
2644	Review and implement federal geographic metadata standards Completed --(See 2642) Also, see Metadata documents at http://nris.mt.gov/gis/datalist.html FGDC Metadata Standard was adopted by the Interagency GIS Technical Working Group FGDC Standard will likely be adopted by ITAC as a State standard	P/O	GIS
2645	Review federal spatial data transfer standards (SDTS) Completed--recommended by GIS TWG as standard	P	GIS
2646	Inventory and make available information collection and documentation standards On-going via the ITAC GIS Task Force & NRIS on-line clearinghouse Continue work with the ITAC GIS Task Force and ITAC Support development of National Spatial Data Infrastructure nodes at 4 locations in Montana.	P/O	ALL
2647	Standardize species data collection formats for sensitive plants and animals and natural communities Standard forms created and distributed for reporting occurrences of rare plants and animals. Community data collection standards are being developed in collaboration with the U.S. Forest Service via the ECADS system. Standards established for reporting bird distribution data for inclusion in Fifth Edition of Montana Bird Distribution. Developed standards with FWP and FWS to assess and map prairie dog towns. Continue to distribute and promote consistent species-level data reporting for vertebrate species of concern. Developing computer format for Wetlands Inventory forms Placing data submittal forms, and accompanying instructions, on Internet	P	NHP
2648	Establish inventory, monitoring and biodiversity assessment standards Most collaboration has been in community data, again via development of the ECADS system in collaboration with the U.S. Forest Service Inventory standards for prairie dogs established and adopted by Fish, Wildlife and Parks contractors. Inventory and population delineation standards established for prairie dog, wolf, harlequin duck and northern bog lemming. Provided review and comments on Wetland Inventory form developed by MDT.	P	NHP
2649	Develop biological community classification system for Montana. Community classification work well underway as part of a Western regional Initiative. Extensive work completed in cross-walking classification among Western states and agencies. Work underway to publish classification and key for southwest Montana ; in particular, the Beaverhead Mountains Section of the Middle Rocky Mountain province (Bailey). Results will be posted on the Internet.	P	NHP

GOAL 3: Provide User Support: Besides insuring natural resource information is available, NRIS has a goal to help users make the best use of the information by providing technical assistance, consulting, and development of information analysis and interpretation tools. This assistance and the tools help user effectively use the information. Without the tools to analysis and interpret information, data has less value.

Code	Performance Measure	Meth	Prgm
7. Objective: PROVIDE TECHNICAL ASSISTANCE: Through the NHP, WIS, and the GIS provide technical assistance and consultation to state agency and other NRIS data patrons.			
3750	NRIS will consult with state agencies and local government on information systems needs assessments, database design, information management tools design and development, and pilot project development as requested. Met with Department of Revenue on GIS Parcel Mapping project Provided Internet briefing and training to DEQ (3 Sessions), DNRC (2 sessions), FWP (2 sessions), EQC, Governor, and Historical Society (SHPO) Provided (2) one-day workshops one-day workshop to K-12 teachers on GIS and the Internet Met with the Montana Regional Strategic Initiatives group to consult on NRIS services and data and GIS techniques Meet with Lewis and Clark County / Jefferson County parties interested in coordinating on GIS development Meet with Bitterroot Water Forum Assisted FWP in initiating use of new data base software. DNRC: GIS briefing EQC: NRIS briefing DEQ: Internet development consultation & technical assistance FWP: Internet development consultation & technical assistance Dept of Administration Internet briefing; provided Netscape Internet class to agency employees Performance Based Budget workshop & presentations to state agencies Served on ITAC GIS Task Force Served on the ITAC Internet Task Force WIS: Staff continued providing input to the Upper Clark Fork Steering Committee, Big Hole Basin Advisory Group, Watershed Coordinating Council, and Wetlands Advisory Council on data availability and proposing pilots to create supporting GIS-based data basis. Participate on the Montana Cadastral Mapping Project Technical Advisory Committee. Support development of National Spatial Data Infrastructure nodes at 4 locations in Montana. Commented on design and content of Wetlands Inventory forms. Collaborated with BLM and USFS on species database development	P	ALL
3751	Specifically support state agency libraries by: participating in the State Agency Librarians Roundtable; providing basic WLN training; and other support as requested Attended all meetings of Round table Began development of plan to provide greater support to natural resource agency libraries cataloging and weeding efforts Assisted and consulted with DEQ library task force Worked with state agencies to develop a plan for a coordinated approach & proposal for their agency libraries	P	ALL
8. Objective: CREATE TOOLS: When appropriate, develop and make available the tools for the access and use of natural resource information.			
3852	During the biennium, NRIS will develop and implement on-line natural resource information search tools Implemented Wide Area Information Search (WAIS) server and search software on the on-line clearinghouse Investigating other methods (ex. JAVA software) Developed and distributed Data Dictionary--an ARC/INFO AML to facilitate documentation and searching of GIS databases Continued development of user interface software using Microsoft Access. This software will streamline request tracking and reporting. Implemented an Excite™ search engine on NRIS Web Site. NHP: Added links to approximately 20 biodiversity information sites on web page. Enhanced multi-state bibliographic database. NHP: developing extensive database search and report tools for access to species information over the Internet	O	ALL
3853	Develop an upgraded system for providing on-line access to Natural Heritage data used by USFS	O	NHP

	personnel System will be upgraded when USFS completes region wide hardware and software upgrade. Investigating possibility of using the Internet as a solution to on-line access. Internet system currently being developed.		
3854	Publish and distribute three references/guides on Montana species Fifth edition of Montana Bird Distribution is in late stages of production. Distribution scheduled for March, 1996. Fifth edition of Montana Bird Distribution produced and distributed. Production of Montana sensitive species guidebook being investigated, with the Internet being primary means of distribution and updates. Prototype Montana Sensitive Species Guidebook developed using the Internet. 15 species accounts completed with ca. 200 scheduled for completion in next 12 months. *Montana Bird Distribution* published. Sensitive species guidebook development underway via the Internet. Guide to Montana Reptiles and Amphibians published in *Montana Outdoors*.	P	NHP
3855	Utilize Internet and other bulletin board service (BBS) software to provide access to critical natural resource information In progress--See http://nris.mt.gov/	O	ALL
3856	Identify and evaluate easy-to-use commercial, off-the-shelf software packages to support natural resource information users Evaluated and developed prototype MS Access logging program WIS: Used Microsoft Access to facilitate data entry for use with ArcView 2 GIS software. NHP: Installed Access software to develop and run POD and Bird databases ; updated Netscape and ArcView. Began using Corel Presentations for demonstrations. NHP: have acquired Photoshop for managing image library	P/O	ALL